Politics and Public Health

The Effect of State Regulations on Truck-Crash Fatalities

Grant W. Neeley, PhD, and Lilliard E. Richardson Jr, PhD

To improve traffic safety, states limit truck length and weight, and some set lower speed limits for trucks than for other vehicles. We examined the impact of truck-specific restrictions and general traffic-safety policies on fatality rates from crashes involving large trucks.

We used state-level data from 1991 to 2005 with a cross-sectional time-series model that controlled for several policy measures. We found that higher speed limits for cars and trucks contributed to higher fatality rates, but differential speed limits by vehicle type had no significant impact.

Truck-length limitations reduced fatalities in crashes involving large trucks. Our model estimates suggested that if all states had adopted a speed limit of 55 miles per hour for all vehicles in 2005, an additional 561 fatalities would have been averted. (*Am J Public Health.* 2009;99:408–415. doi:10.2105/AJPH.2008.136952)

LARGE TRUCKS ACCOUNT for less than 5% of registered vehicles in the United States and only 8% of the total miles driven, but they are disproportionately involved in passenger vehicle occupant deaths compared with other vehicle types.[1] About 5000 fatalities and 120 000 injuries per year occur in large-truck crashes; 15% of these fatalities occur in large trucks, and 78% occur in the other vehicles involved.[2,3]

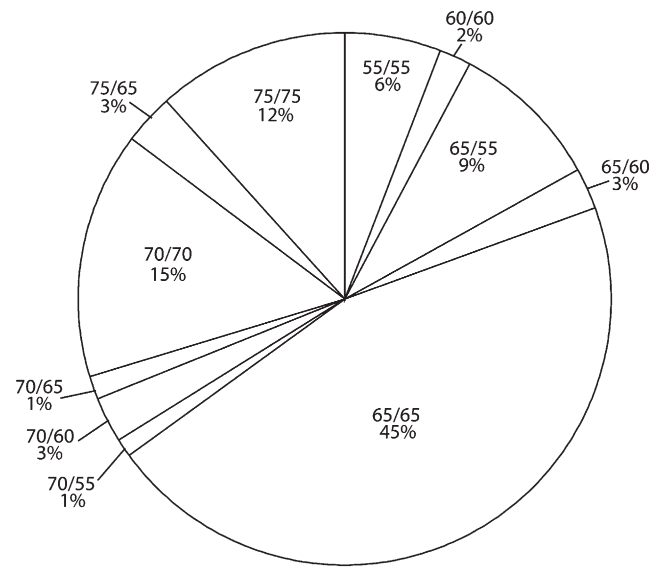
The Federal Motor Carrier Safety Administration set a goal of reducing fatalities associated with crashes involving trucks by 41% from 1996 to 2008, and the rate dropped from 2.81 fatalities per 100 million vehicle miles traveled (VMTs) in 1996 to 2.29 in 2004. The federal government regulates truck-driver behavior with required rests and time traveled per day, and the number of on-site safety reviews at trucking companies doubled from 1998 to 2004.[2] The states, however, are primarily responsible for American traffic-safety policy, including licensing guidelines, speed limits, laws concerned with drinking and driving, and seat-belt requirements. Some state policies have been enacted in direct response to federal pressure, such as the adoption of 0.08 blood alcohol content (BAC) laws, but state traffic-safety policies vary considerably.

State policies often regulate driving behavior without regard to vehicle type (e.g., prohibiting drug use, limiting BAC, setting a minimum legal drinking age, and requiring the use of seat belts). These policies seek to limit injurious and fatal traffic crashes by all drivers. For truck transportation, states not only regulate speed but also limit truck weight, length, and height, and states use scales to detect violations.[4] The federal government has set a standard for truck weight and length on interstate highways, but states set maximum truck lengths and weights for all other state roadways.

States have frequently modified speed limits over recent years as legislators have responded to national regulations, federal financial incentives, interest-group pressure, and constituent preferences. Although there is a spirited ongoing debate on the general impact of speed limits, truck speed limits have received scant scholarly attention. The common assumption is that higher speed limits will pose a greater danger to vehicle occupants, but research on the effect of speed limits on traffic crash fatalities has shown mixed results.[5–14] In addition, studies on the impact of average truck speeds on fatalities show inconsistent results; some studies have shown that speed alone had no impact on fatalities,[15] whereas others have found a significant association between higher speed limits and more fatalities.[16,17]

States often set lower speed limits for large trucks than for other motor vehicles. Differential speed limits by vehicle type have the potential to create 2 streams of traffic flowing at different rates.[18] Studies have shown that differential speed limits resulted in observed speed differences between cars and trucks, but the actual differences were often less than the posted differences.[19–21] Further, studies have found that a greater speed difference was associated with a significant increase in fatalities.[15–17,22]

Since 1995, states have had the freedom to set maximum speed limits. As shown in Figure 1, trucks and cars had the same maximum rural speed limits for a majority of years from 1991 to 2005. The 55-mile-per-hour (mph) speed limit was in force for both passenger vehicles and large trucks 6% of the time. Truck and car speed limits at 60 mph account for 2% of state-year observations, truck and car limits at 65 mph account for 45%, truck and car limits at 70 mph account for 15%, and truck and car limits at 75 mph account for 12%. Differential speed limits account for 20% of observations, with the largest difference at 15 mph (70 for cars and 55 for trucks) in 1% of observations, a 10-mph difference in 15%, and a 5-mph difference in 4%.



Note. Speed limits are given in miles per hour, with the speed limits for cars listed before those for trucks. The maximum rural speed limit in each state for each year was a state–year observation.

Figure 2 provides an initial assessment of the relationship between maximum rural speed limits and the traffic-fatality rate. The graph clusters the data by car speed limits; within each cluster, there is a separate bar for each truck speed limit associated with that cluster's car speed limit. Generally, states with higher speed limits have higher fatality rates. The 65-mph and 75-mph clusters have higher fatality rates than do the 55-mph and 60-mph clusters. There is no real difference between the truck speed categories in the lower-speed clusters, but the 70-mph cluster shows a strong positive relationship between higher truck speeds and much higher fatality rates.

Little research has been conducted on the impact of trucking regulations on traffic safety, but we intended to fill this gap. Our main areas of interest were the maximum speed limits for trucks and passenger vehicles and the differences between the 2 speed limits. Our research focused on whether truck-specific speed limits, length restrictions, and weight limits affected US traffic-fatality rates. We used state-level data to conduct a cross-sectional time-series regression analysis of traffic fatalities from crashes involving large trucks in the United States from 1991 to 2005. We also examined the impact of a number of general traffic-safety policies on fatality rates from crashes involving large trucks.

In addition to speed limits, alcohol laws have long been at the forefront of states' traffic-safety efforts. Studies have shown that the minimum legal drinking age affects passenger vehicle safety,[23,24] but this factor is invariant during our time frame. To test policies seeking to reduce fatalities related to drinking and driving, we dichotomized the presence of a 0.08 BAC state law, and we included the state's alcohol consumption level in our model. Previous research shows that states with higher levels of alcohol consumption experience higher truck-crash fatality rates[25–28] and that 0.08 BAC laws reduce such fatalities.[29]

States also enact passenger-restraint laws to enhance traffic safety, and studies have found a significant fatality-rate reduction associated with laws requiring seat belt use in passenger vehicles.[27,28,30–32] We expected this relationship to hold for fatalities from crashes involving large trucks.

Highway conditions also influence crash fatalities, and our model included funding levels for 3 categories of highway expenditures: capital, maintenance, and police and safety.[27,28,33] We expected capital expenditures to increase roadway mileage and increase traffic flow, which accommodate higher speeds that could contribute to crash fatalities. Maintenance expenditures may eliminate poor road conditions or enhance safety features, thereby lowering fatality rates. We expected higher levels of law enforcement expenditures to increase compliance with safety laws and therefore decrease the fatality rate.

METHODS

We tested a cross-sectional time-series regression model of truck-crash fatalities in the United States for 1991 to 2005. The dependent variable was the number of fatalities in vehicle crashes involving a large truck per billion VMTs in the state. We obtained the dependent variable from the Fatality Analysis Reporting System, a dataset maintained by the National Highway Traffic Safety Administration.[34] We dropped Hawaii from the analysis because (1) there was a low number of fatalities (5 or fewer annually in 10 of the years covered by our analysis), (2) there were few truck registrations, (3) there was no truck traffic from adjoining states, and (4) there was no variation in speed limits, truck length restrictions, or truck weight restrictions during the study period.

Given the dominance of the cross section (49 states) over the time component (15 years), we used generalized least squares

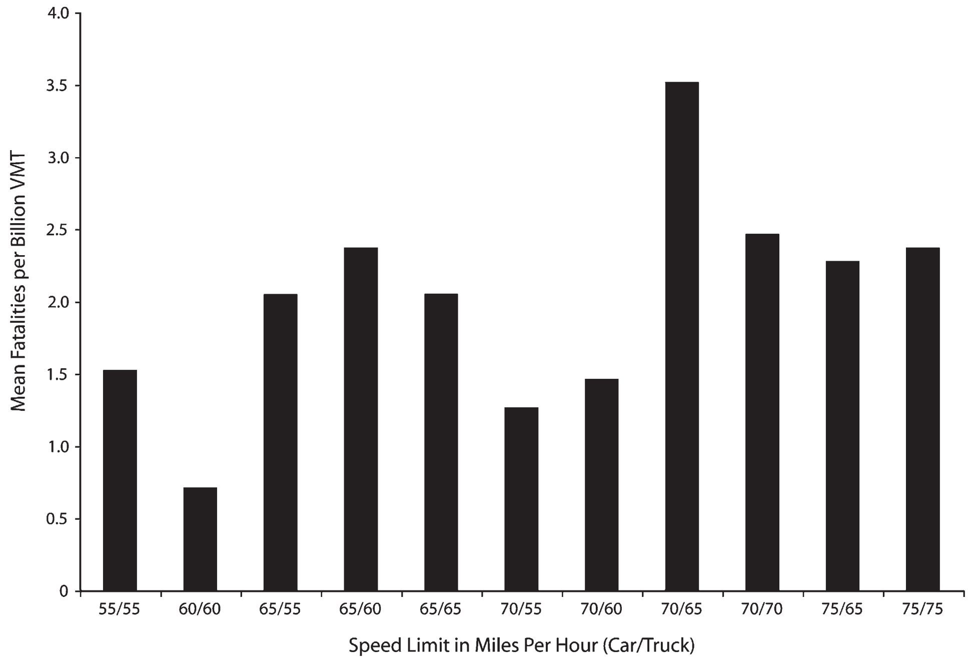


FIGURE 2—Mean number of fatalities in crashes involving large trucks per billion vehicle miles traveled (VMT), by rural interstate speed limits: United States, 1991–2005.

regression to estimate models. The states were the unit of analysis, and the model included fixed effects for states and for each year. The state fixed effects accounted for unique circumstances in each state, and the year fixed effects accounted for changes over time in the data set, such as national factors that may have influenced traffic safety across states.

In estimating the models, we tested for random effects in the cross sections. We used the Breusch and Pagan Lagrangian multiplier test,[35] and we found that $\chi^2=644$, with $P<.001$. This suggested that we reject the random-effects model and use a fixed-effects specification. Then we conducted the Wooldridge[36] test for autocorrelation in the panel [H_0=no first-order autocorrelation] and found evidence of a first-order autoregressive structure ($F_{1,48}=4.09$, with $P=.048$). Therefore, the model relied on a generalized least squares specification with a first-order autoregressive component.

Whereas other studies have examined the relationship between observed speeds and the fatality rate, we focused on speed limits. The only measure consistently available during the time period we studied was the maximum speed limit allowed on any state roadway. Typically, this maximum applies only to rural interstate highways, but some states allow the maximum speed on rural state highways as well. Other states (usually with large urban populations) have no differences between urban and rural speed limits. We used a variety of sources for speed limit data,[37] and when sources conflicted, we confirmed all data by checking state Web sites for relevant statutes, driver's license guides, or highway patrol documents. In some cases, we contacted states to confirm the data.

We obtained data on truck length and weight restrictions from several sources, including the National Automobile Dealers Association,[38] the American Trucking Association, and state agencies. Length and weight restrictions vary by roadway type; for each state we used the highest limit regularly available without a special permit. We obtained data on seat belt laws and 0.08 BAC laws from *Traffic Safety Facts*.[39] We included a dichotomous measure for whether a state had mandatory seat belt legislation in our model. We reported state alcohol consumption in gallons of ethanol per capita as reported by the National Institute of Alcohol Abuse and Alcoholism.[40]

Capital, maintenance, and police and safety expenditures (listed in *Highway Statistics*[41]) included expenditures from all levels of government. To control for inflation, we adjusted dollar values to reflect constant dollars, based on the 1982 to 1984 market basket of the Consumer Price Index for All Urban Consumers from the US Bureau of Labor Statistics.[42] To reduce the effect of short-term fluctuations in budgets or the impact of a single large project, we used the 5-year average of capital expenditures.

We also included several control variables that could influence traffic safety, such as the level of risk associated with the volume of truck traffic. The number of VMTs by trucks would allow a more precise measure of truck traffic, but VMT estimates have only been available since 1994. To extend our time series and capture maximum variation in state policies, we operationalized the amount of truck traffic on a state's roadways as diesel fuel consumption in that state per VMT.[41] For the observed data (1994–2005), the correlation between diesel fuel consumption and truck VMT was 0.97, indicating that the operationalization would be a viable proxy. We expected that as the diesel fuel consumption per VMT in a state increased, the truck-crash fatality rate would increase.

To capture the total amount of traffic on a state's roadways, we included the total VMT by all vehicles per capita.[41] The total VMT reflected underlying trends in population, number of vehicles on the road, and distances traveled. We expected that total VMT per capita would correlate positively with truck-crash fatality rates, because higher VMT suggests more driving time, implying greater crash risk.

Per capita income (measured in constant dollars, with 1982–1984=$100) reflects economic factors,[43] but interpretations of its impact vary. Some studies suggest that citizens with higher incomes will demand greater safety,[26] whereas others suggest that drivers with higher incomes will place a higher value on time, thus increasing risky driving behavior.[44,45] Although risk compensation may affect individual behavior, we expected higher average income to contribute to safety in various ways, such as the purchase of newer and generally safer vehicles.

Unemployment rates also influence driving habits; periods of high unemployment may suppress driving as citizens economize their leisure activities.[27,28] We obtained data on income and unemployment from the US Census Bureau.[43]

We also included control variables for weather and population density.[43] Severe cold weather may correlate with unsafe road conditions that limit traffic, thus reducing fatalities. Also, whereas precipitation may slow truck traffic, it also increases the likelihood of a driver losing control and experiencing a more severe crash. Population density is a proxy for urban areas,[43] which have lower speed limits and higher levels of congestion that may reduce truck speed and induce truck drivers to seek less traveled routes or travel at less congested times, resulting in lower fatality rates.

RESULTS

Our dependent variable was the fatality rate in crashes involving large trucks (fatalities per billion VMT). Because of the high degree of collinearity among our main variables of interest, we used 4 model specifications: maximum speed limit for trucks, maximum speed limit for cars, equal maximum speed limits for both vehicle types, and the total combined speed-limit amount above 55 mph (Table 1). We relied on a dichotomous variable for whether the 2 speed limits were equivalent (1) or not (0), but in unreported models, we observed no differences if the variable was measured as an interval variable.

The first model revealed that a higher truck speed limit had a significant positive association with the truck-crash fatality rate. In the second model, when we controlled for the same speed limit for cars and trucks, the truck speed limit parameter estimate was also positive and significant. The equal-speed-limit variable did not approach significance, and the coefficient's sign was counter to expectations, with a positive value (and thus a higher fatality rate) rather than a negative one. A higher speed limit for trucks contributed to significantly higher fatality rates, but differences in speed limits between cars and trucks had no significant impact. The third model showed that car speed limits had similar positive and significant effects on the truck-crash fatality rate, and the equal-speed variable remained nonsignificant. The fourth model showed that the total combined speed-limit amount above 55 mph had a significant effect on the fatality rate; the equal-speed variable was again nonsignificant.

Two safety policies geared toward all vehicles had different effects on the fatality rate from crashes involving large trucks. The adoption of a 0.08 BAC law had no significant impact on truck-crash fatalities, and a seat belt law had a significant negative effect. Although other studies[29] have found safety effects for a 0.08 BAC law, drinking and driving may be more widespread in urban areas or on rural arterials than on highways with a high truck volume. Studies have demonstrated that seat belt laws significantly reduce all traffic fatalities,[27,28,30–32] and we found that seat belt laws were associated with reduced fatality rates in crashes involving large trucks.

Truck-specific regulatory policies governing maximum length and maximum weight showed mixed effects on truck-crash fatalities. A higher maximum truck length was significantly associated with a higher fatality rate, but the effect of a higher maximum truck weight was nonsignificant and not in the hypothesized direction. There are several ways to explain the null finding on maximum weight. First, a large proportion of truck traffic occurred on interstate highways, which have a consistent federal standard of 80 000 pounds in maximum weight and 65 feet in maximum overall length. Second, there were numerous exceptions to the weight limits, such as permits for manufactured homes and large, nonseparable loads. Third, studies suggest that a small fraction of trucks exceed 80 000 pounds.[46] Fourth, in a 2002 study, less than 1% of fatalities involved trucks that weighed more than 100 000 pounds, and less than 1% of fatalities involved trucks longer than 80 feet in combined length.[3] Finally, the low variance in the weight limit variable may have limited the results, because 34 states had a truck weight limit of 80 000 pounds in 2005.

Of the expenditure variables, only capital expenditures attained significance. Generally, states that spent more on expanding highway capacity had significantly higher truck-crash fatality rates. Higher capital expenditures may increase capacity, allowing higher speeds that contribute to more-severe crashes. On the other hand, maintenance

TABLE 1—Cross-Sectional Time-Series Models of Fatalities per Billion VMT From Crashes Involving Large Trucks: United States, 1991–2005

Variables	Truck Speed Limit Only, b (SD)	Truck Speed Limit With Equal Speed Limits for Trucks and Cars, b (SD)	Car Speed Limit With Equal Speed Limits for Trucks and Cars, b (SD)	Total Combined Speed-Limit Amount Above 55 mph With Equal Speed Limits for Trucks and Cars, b (SD)
Truck speed limit	0.0153* (0.0067)	0.0148* (0.0068)	. . .	. . .
Car speed limit	. . .	. . .	0.0156* (0.0070)	. . .
Total combined speed limit amount above 55 mph	. . .	. . .	. . .	0.0078* (0.0035)
Equal speed limits for cars and trucks	. . .	0.0589 (0.1421)	0.2058 (0.1453)	0.1309 (0.1398)
Truck length limit	0.0233* (0.0109)	0.0231* (0.0109)	0.0232* (0.0109)	0.0232* (0.0109)
Truck weight limit	−0.0036 (0.0089)	−0.0036 (0.0089)	−0.0034 (0.0089)	−0.0035 (0.0089)
Diesel fuel consumption per VMT	0.0222** (0.0080)	0.0223** (0.0080)	0.0222** (0.0080)	0.0222** (0.0080)
Total VMT per capita	−0.0739* (0.0372)	−0.0753* (0.0374)	−0.0735* (0.0373)	−0.0745* (0.0374)
Alcohol consumption	0.2590 (0.1939)	0.2730 (0.1970)	0.2821 (0.1968)	0.2775 (0.1968)
0.08 BAC law	−0.0205 (0.0530)	−0.0185 (0.0532)	−0.0182 (0.0531)	−0.0184 (0.0532)
Seat belt law	−0.2962** (0.0930)	−0.3000** (0.0935)	−0.2965** (0.0935)	−0.2980** (0.0935)
Capital expenditures per capita[a]	0.0247** (0.0064)	0.0248** (0.0064)	0.0248** (0.0065)	0.0248** (0.0065)
Maintenance expenditures[b]	0.0127 (0.0179)	0.0122 (0.0180)	0.0120 (0.0179)	0.0121 (0.0179)
Police and safety expenditures[b]	−0.0362 (0.0300)	−0.0355 (0.0300)	−0.0350 (0.0300)	−0.0353 (0.0300)
Income per capita[b]	0.1100** (0.0403)	0.1083** (0.0405)	0.1052** (0.0405)	0.1067** (0.0405)
Unemployment	−0.0564* (0.0233)	−0.0572* (0.0234)	−0.0561* (0.0233)	−0.0567* (0.0233)
Temperature	0.0029 (0.0143)	0.0028 (0.0143)	0.0025 (0.0143)	0.0027 (0.0143)
Precipitation	0.0012 (0.0030)	0.0012 (0.0030)	0.0013 (0.0030)	0.0012 (0.0030)
Population density	−0.0002 (0.0018)	−0.0003 (0.0018)	−0.0003 (0.0018)	−0.0003 (0.0018)
Constant	−1.3900 (1.3743)	−1.3615 (1.3768)	−1.5705 (1.3989)	−0.6287 (1.3337)
F statistic (*df*)	7.24** (31, 655)	7.01** (31, 655)	7.04** (31, 655)	7.03** (31, 655)

Note. VMT = vehicle miles traveled; BAC = blood alcohol content. State and year fixed effects were estimated but not reported. The model relied on a generalized least squares specification with a first-order autoregressive component, which fits a model when the disturbance term is first-order autoregressive. Hawaii was excluded. For state-year observations, n = 735; for state cross-sections, n = 49.
[a]Five-year average in constant 2005 dollars.
[b]In constant 2005 dollars.
*$P < .05$; **$P < .01$.

expenditures and police and safety expenditures were not significantly related to truck-crash fatality rates. Such expenditures may focus on roadways not heavily used by large trucks or may be used for features that increase safety for cars but not trucks.

The control variables generally performed as expected. Diesel fuel consumption per VMT, as a proxy for truck travel, had a strong positive parameter estimate. As truck traffic increased, the truck-crash fatality rate also increased. The total VMT per capita variable, however, was significant and negative (contrary to expectations). In other words, the greater the mileage driven by the average state driver, the lower the state's truck-crash fatality rate. Of the remaining control variables, only income and unemployment rates attained significance; alcohol consumption, temperature, precipitation, and population density were nonsignificant.

DISCUSSION

Our results agreed with previous research that found a significant association between speed limits and fatalities,[16,17] but our results contradicted studies finding a positive relationship between differential speed limits and fatalities.[15–17,22] Our results suggest that states can reduce traffic fatalities from crashes involving large trucks by lowering speed limits for all drivers and that setting lower limits for trucks than for cars will not mitigate the safety effects. Overall, higher speed limits for all vehicles appeared to be a major factor in the fatality rate from crashes involving large trucks, and a speed-limit difference between cars and trucks was not a significant issue. Research has shown that differences in actual speeds are often smaller than differences in posted speeds,[19–21] which may explain this finding of nonsignificance.

To add context to the interpretation of the results, Table 2 presents the estimated change in the annual number of fatalities for each state based on the fourth model in Table 1. With the parameter estimates for the total combined speed-limit amount above 55 mph (0.0078) and all other variables held constant at 2005 state levels, we predicted the number of fatalities in 2 scenarios: a state adopting a 55-mph speed limit for cars and trucks and a state adopting a 75-mph speed limit for all vehicles. We then used these values to estimate the expected change in fatalities relative to the actual 2005 fatalities. For example, in 2005, California's speed limit for cars was 70 mph and for trucks was 55 mph, and the state had 428 traffic fatalities. The model predicted that if California had adopted a 75-mph speed limit for all vehicles in 2005, the state would have had 64 more traffic fatalities than it did. Alternatively, if Texas had reduced its 2005 speed limits of 75 mph for cars and 65 mph for trucks to 55 mph for all vehicles, the model predicted that there would have been 54 fewer fatalities than the 502 observed in the state that year.

Overall, the model predicted that if all states had changed their actual 2005 speed limits to a 75-mph limit, 362 more fatalities would have occurred. Alternatively, if all states had dropped their 2005 speed limits to 55 mph, 561 fewer fatalities would have occurred. The potential annual total shift of 923 fatalities created by the change from 55 mph to 75 mph represents almost 18% of the actual 5200 fatalities from crashes involving large trucks in 2005, suggesting that higher speed limits have contributed to thousands of additional fatalities from truck crashes over the past decade.

TABLE 2—Predicted Annual Change in Truck-Crash Fatalities per State in 2005 Based on Hypothetical Adoption of 55-mph and 75-mph Speed Limits

State	Actual Fatalities, No.	Adoption of 55-mph Speed Limit, Change in Fatalities	Adoption of 75-mph Speed Limit, Change in Fatalities
		Speed Limits for Cars 65 mph, Trucks 55 mph	
Illinois	191	−9	+26
Ohio	177	−9	+26
Oregon	66	−3	+8
		Speed Limits for Cars 65 mph, Trucks 65 mph	
Alaska	5	−1	+1
Connecticut	17	−5	+5
Delaware	8	−2	+2
Kentucky	124	−7	+7
Maine	19	−2	+2
Maryland	60	−9	+9
Massachusetts	24	−9	+9
New Hampshire	11	−2	+2
New Jersey	98	−11	+11
New York	147	−22	+22
Pennsylvania	183	−17	+17
Rhode Island	1	−1	+1
Vermont	9	−1	+1
Virginia	112	−12	+12
Wisconsin	87	−9	+9
		Speed Limits for Cars 70 mph, Trucks 55 mph	
California	428	−39	+64
		Speed Limits for Cars 70 mph, Trucks 60 mph	
Michigan	111	−16	+16
Washington	68	−9	+9
		Speed Limits for Cars 70 mph, Trucks 65 mph	
Arkansas	116	−6	+4
Indiana	138	−14	+9
		Speed Limits for Cars 70 mph, Trucks 70 mph	
Alabama	122	−14	+5
Florida	406	−46	+15
Georgia	229	−26	+9
Iowa	73	−7	+3
Kansas	80	−7	+3
Louisiana	122	−10	+4
Minnesota	69	−13	+4
Mississippi	91	−9	+3
Missouri	166	−16	+5
North Carolina	204	−22	+8
South Carolina	124	−12	+4

Continued

TABLE 2—*Continued*

Tennessee	156	–17	+6
West Virginia	55	–5	+2
Speed Limits for Cars 75 mph, Trucks 65 mph			
Idaho	34	–3	+1
Montana	23	–3	+1
Texas	502	–54	+18
Speed Limits for Cars 75 mph, Trucks 75 mph			
Arizona	97	–18	. . .
Colorado	68	–14	. . .
Nebraska	48	–6	. . .
Nevada	54	–6	. . .
New Mexico	63	–8	. . .
North Dakota	17	–2	. . .
Oklahoma	121	–15	. . .
South Dakota	13	–3	. . .
Utah	32	–8	. . .
Wyoming	31	–3	. . .
Totals	5200	–561	+362

Note. The predicted value is the expected reduction or increase in fatalities (compared with the actual fatalities in each state for 2005) associated with the hypothetical adoption of a 55-mph speed limit for all vehicles and a 75-mph speed limit for all vehicles. The predictions rely on model parameter estimates that specify the total combined speed limit amount above 55 mph. We used hypothetical changes in the speed limit laws compared with the actual speed limits in effect in 2005, with all other variables held constant at the actual 2005 values for each state. Hawaii was excluded from the analysis.

States have an array of policy tools they can use to reduce the fatality rate from crashes involving large trucks. Our results suggested that truck speed limits, car speed limits, seat belt laws, and truck-length limits are significant predictors of fatality rates in crashes involving large trucks. Differential speed limits for trucks and cars did not affect safety, and truck weight limits were not significantly associated with fatality rates from crashes involving large trucks. ■

About the Authors

Grant W. Neeley is with the Department of Political Science, University of Dayton, Dayton, OH. Lilliard E. Richardson Jr is with the Truman School of Public Affairs, University of Missouri, Columbia.

Requests for reprints should be sent to Grant W. Neeley, Department of Political Science, 300 College Park, University of Dayton, Dayton, OH 45469-1425 (e-mail: Grant.Neeley@notes.udayton.edu).

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Contributors

G. W. Neeley and L. E. Richardson Jr contributed equally to the writing of this article.

Human Participant Protection

No protocol approval was needed for this study.

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Motorcycle Helmet Laws in the United States From 1990 to 2005: Politics and Public Health

Jenny Homer, MPA, MPH, and Michael French, PhD

The passage of universal helmet legislation requiring motorcycle riders of all ages to wear helmets is a timely and controversial issue with far-reaching public health implications, especially as the number of motorcycle fatalities continues to rise. In 2008, only 20 states had a universal helmet policy, an effective safety measure for reducing motorcycle fatalities and serious injuries.

We used state-specific longitudinal data for the continental United States from 1990 through 2005 to determine which industry, political, economic, and demographic factors had a significant influence on the enactment of universal helmet policies. Our findings suggest that political climate and ideology are important predictors of helmet policies. (*Am J Public Health.* 2009;99: 415–423. doi:10.2105/AJPH.2008.134106)

AFTER DECLINING throughout the 1980s and early 1990s, fatal motorcycle crashes began increasing in the late 1990s.[1] The number of motorcycle riders killed in 2006 (4810) accounted for the highest share (11%) of total traffic fatalities ever.[2] Recent trends are alarming and should generate interest in public health and policy interventions to reduce the risks associated with motorcycle riding.

Studies have consistently shown that a motorcycle helmet is a vital piece of equipment for decreasing the risk of death and brain injuries[3–7] and that helmet laws are significantly associated with lower fatalities.[8–10] One study estimated that motorcycle helmets lower the risk of death by 42% and head injury by 69%.[4] Yet, few traffic policies have been as controversial as universal motorcycle helmet laws, which require every rider to wear a helmet regardless of his or her age. Motorcycle rights groups first organized and challenged the laws in court after Congress withheld highway construction funding from states without universal helmet laws in 1967.[9,11] The federal government has taken various actions since then, decreasing (or increasing) funding for states without (or with) universal helmet laws, and state governments have been responsive to these incentives (Figure 1). The last change occurred in 1995 when Congress repealed financial incentives for states without universal helmet laws.[13] As of April 2008, 20 states had universal helmet laws, 27 required only young riders to wear helmets, and 3 (Illinois, Iowa, and